

REPPERGER RESEARCH INTERN PROGRAM

RESEARCH PROJECT #: AFRL-RHW-23-03

Building Cognitive Security in Online Environments

PROJECT DESCRIPTION: The technology revolution has enabled cognitive manipulations and erosion of trust on an unprecedented and elaborate scale. Adversaries can attack the way an individual thinks through fake news, deep fakes, participatory propaganda, knowledge overload etc. Therefore, the DoD must enhance resilience against information- based manipulation and understand the vulnerabilities. This project seeks to investigate cognitive security surrounding the exploitation of cognitive biases, media manipulation, and social engineering attempts in online spaces. This will be accomplished by studying the foundational aspects of human cognitive abilities to make sense, interpret, and shape reality in emulated social media environments. There are several relevant questions: How does information overload impact memory, error detection, and decision making for social media users? What are the latent variables that impact cognitive security such as perceived source credibility, emotions, and domain expertise? What type of narratives, themes, and semantic features resonate and are most likely to engage audiences? Student interns will gain knowledge about cyberpsychology and social media analytics through the course of the internship. Additionally, interns will have the chance to develop new statistical analyses skills, learn about methods for applied research, and collaborate with an interdisciplinary team.

ACADEMIC LEVEL: PhD, Master's, Bachelor's

DISCIPLINE NEEDED:

- Cognitive Science
- Experimental Psychology
- Human Factors Psychology

RESEARCH LOCATION: Virtual

RESEARCH MENTOR: Kathleen Larson, PhD
Experimental Psychology, University of Nevada, Las Vegas, 2017



Dr. Kathleen Larson is a Research Psychologist for the Air Force Research Laboratory's Mission Analytics Branch (711/RHWAR). Dr. Larson's background is in cognitive psychology, and she is currently interested in developing methods and analytics to leverage social media information to better understand human behavior.

Photo courtesy of the U.S. Air Force Research Laboratory.